

In the Claims:

Please cancel claim 1 and add new claims 21-40 as follows:

21. (New) A method, comprising the steps of:
 - defining a first memory chunk of system memory, the first memory chunk being a continuous memory space of a first predetermined size;
 - dividing the first memory chunk into a second memory chunk and a third memory chunk;
 - assigning control of the second and third memory chunks to a chunk pool;
 - transferring control of the second memory chunk from the chunk pool to a unit pool;
 - separating the second memory chunk into units of a second predetermined size;
 - and
 - storing data of the second predetermined size in the units.
22. (New) The method of claim 21, further comprising the steps of:
 - transferring control of the third memory chunk to a second chunk pool; and
 - dividing the third memory chunk into a fourth memory chunk and a fifth memory chunk.
23. (New) The method of claim 21, further comprising the step of:
 - re-combining the second memory chunk and the third memory chunk to form the first memory chunk.
24. (New) The method of claim 21, wherein the second and third memory chunks are each one-half the first predetermined size.
25. (New) The method of claim 24, wherein the first predetermined size is one of 1,024 bytes, 2,048 bytes, 4,096 bytes, 8,192 bytes, 16,384 bytes and 32,768 bytes.
26. (New) The method of claim 21, further comprising the steps of:

transferring control of the third memory chunk from the chunk pool to a second unit pool;

separating the third memory chunk into units of a third predetermined size, the third predetermined size being different from the second predetermined size; and

storing data of the third predetermined size in the units of the third predetermined size.

27. (New) A system, comprising:

a first chunk of system memory, the first chunk being a continuous memory space of a first predetermined size;

a plurality of chunk pools, each chunk pool assigned to manage chunks of a predetermined size; and

a plurality of unit pools, each unit pool assigned to manage memory units of a unit size, wherein the first chunk is divided into a plurality of chunks, each of the plurality of chunks being assigned to the corresponding chunk pool and wherein one of the chunk pools transfers control of one of the chunks to one of the unit pools which divides the chunk into the memory units of the unit size, the corresponding unit pool storing data of the unit size in the units.

28. (New) The system of claim 27, wherein the system memory is one of static random access memory, dynamic random access memory, synchronous dynamic random access memory and enhanced dynamic random access memory.

29. (New) The system of claim 27, wherein the one of the unit pools recombines the memory units into the chunk and passes control of the chunk back to the corresponding chunk pool.

30. (New) The system of claim 27, wherein, when the memory units are full, the one of the unit pools requests the one of the chunk pools to transfer control of a second chunk to the one of the unit pools to divide the second chunk into additional memory units.

31. (New) The system of claim 27, wherein the first chunk of system memory is used exclusively for data to be stored by the unit pools.
32. (New) The system of claim 27, wherein the first chunk of system memory is assigned during system initialization.
33. (New) The system of claim 27, wherein the chunk pools include a hierarchical relationship where chunk pools receive chunks from a next highest chunk pool in the hierarchy.
34. (New) The system of claim 33, wherein chunk pools return unused chunks to the next highest chunk pool in the hierarchy when a sum of the returned chunks equals the predetermined size of chunk controlled by the next highest chunk pool.
35. (New) A method, comprising the steps of:
receiving data to be stored;
determining a size of the data to be stored;
assigning the data to a unit pool responsible for storing data of the determined size; and
storing the data in a unit of the determined size.
36. (New) The method of claim 35, further comprising the step of:
determining if the unit of the determined size is available for storage.
37. (New) The method of claim 35, further comprising the steps of:
transferring control of a chunk of system memory from a chunk pool to the unit pool when the unit of the determined size is unavailable; and
dividing the chunk into additional units.

38. (New) The method of claim 37, wherein the chunk is one of a continuous memory space of a first predetermined size and derived by dividing the continuous memory space of the first predetermined size.

39. (New) The method of claim 38, further comprising the step of:
allocating the continuous memory space of the first predetermined size during system initialization.

40. (New) The method of claim 35, further comprising the step of:
determining if the size of the data is greater than a maximum size of the unit pools.